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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,226	02/06/2006	Evy Lundgren-Akerlund	034341-004	8983
21839	7590	07/17/2006	EXAMINER	
BUCHANAN, INGERSOLL & ROONEY PC POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404			HADDAD, MAHER M	
			ART UNIT	PAPER NUMBER
			1644	

DATE MAILED: 07/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/553,226	Applicant(s) LUNDGREN-AKERLUND, EVY	
	Examiner Maher M. Haddad	Art Unit 1644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-44 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's amendment, filed on 10/14/05, is acknowledged.

Election/Restrictions

2. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

3. In accordance with 37 CFR 1.499, applicant is required, in response to this action, to elect a single invention to which the claims must be restricted.

- I. Claims 1-6 and 31-44, drawn to a monoclonal antibody capable of binding to a protein which is specifically recognized by the monoclonal antibody produced by the hybridoma deposited at the Deutsche Sammlung von Microorganismen und Zellkulturen GmbH under the accession number DSM ACC2583 or an antigen-binding fragment thereof, a kit, a composition and a method of making.
- II. Claims 7 and 10-13, drawn to a method for isolating a population of mammalian mesenchymal stem cells using the monoclonal antibody that specifically bind to the extracellular I-domain of the integrin alpha10 chain.
- III. Claim 8, drawn to a method for isolating a population of mammalian chondrocytes using the monoclonal antibody that specifically bind to the extracellular I-domain of the integrin alpha10 chain.
- IV. Claim 9, drawn to a method for isolating a population of mammalian ES cells using the monoclonal antibody that specifically bind to the extracellular I-domain of the integrin alpha10 chain.
- V. Claims 14-16, drawn to a population of mammalian *mesenchymal stem cells*.
- VI. Claims 17-19, drawn to a population of mammalian *chondrocytes*.
- VII. Claims 20-22, drawn to a population of mammalian *ES cells*.
- VIII. Claim 23, drawn to a method for detecting a *mesenchymal stem cell* in a sample using the monoclonal antibody that specifically bind to the extracellular I-domain of the integrin alpha10 chain.

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- IX. Claim 24, drawn to a method for detecting a *chondrocyte* in a sample using the monoclonal antibody that specifically bind to the extracellular I-domain of the integrin alpha10 chain.
- X. Claim 25, drawn to a method for detecting an *ES cell* in a sample using the monoclonal antibody that specifically bind to the extracellular I-domain of the integrin alpha10 chain.
- XI. Claim 26, drawn to a method for blocking the binding of a chondrocyte to an extracellular matrix molecule (ECM) using the monoclonal antibody that specifically bind to the extracellular I-domain of the integrin alpha10 chain.
- XII. Claim 27, drawn to a method for modulating the signaling of alpha10beta1 on a mammalian mesenchymal stem cell, ES cell or a chondrocyte, using the monoclonal antibody that specifically bind to the extracellular I-domain of the integrin alpha10 chain.
- XIII. Claim 28, drawn to a method for detecting the expression of integrin alpha10beta1 in a *tissue sample* using the monoclonal antibody that specifically bind to the extracellular I-domain of the integrin alpha10 chain.
- XIV. Claims 29-30, drawn to a method for in vivo imaging the expression of the integrin alpha10beta1 in mammal using the monoclonal antibody that specifically bind to the extracellular I-domain of the integrin alpha10 chain.

4. The inventions listed as Groups I-XIV do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The invention of Group I was found to have no special technical feature that defined the contribution over the prior art of WO 9951639 (see entire document, International search Report).

The '639 publication teaches and claims monoclonal antibodies that are capable of binding to alpha10 protein (see published claims 10-11 in particular). The '639 publication teaches a peptide of the I-domain of alpha10 subunit (see pg 5, line 35 to pg 6, line 2 and page 6, lines 31-33 in particular). It has been held that once the antigen of interest is selected, the use of that antigen in the known method of Kohler and Milstein will result in the expected hybrid cell lines and the specific monoclonal antibodies. Ex parte Erlich, 3 USPQ2d 1011, 1015 (BPAI 1986).

Since Applicant's inventions do not contribute a special technical feature when viewed over the prior art they do not have a single general inventive concept and so lack unity of invention.

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5. The application contains claims directed to the following patentably distinct species of the claimed Inventions XII: wherein the cell is:

- A. mesenchymal stem cell, ,
- B. ES cell, or
- C. a chondrocyte.

These species are distinct because the pathological conditions differ in etiologies and therapeutic endpoints, and represent patentably distinct subject matter.

Applicant is required under 35 U.S.C 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable.

6. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maher Haddad whose telephone number is (571) 272-0845. The examiner can normally be reached Monday through Friday from 7:30 am to 4:00 pm. A message may be left on the examiner's voice mail service. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached on (571) 272-0841. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Maher Haddad

Maher Haddad, Ph.D.

Patent Examiner

Technology Center 1600

July 10, 2006